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Attitudes of undergraduate medical students toward mental illnesses and psychiatry

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Abstract:

BACKGROUND: Worldwide, studies show negative attitude among medical students toward psychiatry and mental illness. The knowledge of the attitude and awareness of the undergraduate medical students toward psychiatry, mental health, and psychiatric disorders are most important as they are going to be involved in the care of these patients either directly or indirectly during the later years of their careers.

AIM: This study aims to assess attitude toward psychiatry and mental illness among undergraduate medical students.

METHODOLOGY: The responses of 67 medical students from the 6th semester (third professional year) batch who completed their 2-week clinical posting of psychiatry in 4th semester (i.e., second professional year) were collected using validated questionnaires, attitude towards mental illness (AMI), and attitude towards psychiatry (ATP) that assessed their attitudes to psychiatry and mental illness. Double data entry and validation were done using EpiData and analysis using Epi Info software.

RESULTS: Median AMI score was 54 (out of maximum 100) showing a neutral AMI. Median ATP score was 82 (out of maximum 150) also showing a neutral ATP. The theme-wise analysis showed that the attitude of students toward psychiatrist and psychiatry branch was relatively better compared to their AMI.

CONCLUSION: Undergraduate students have a neutral attitude to psychiatry and mental illness. More efforts are needed to change the attitude to favorable side.

Keywords:

Attitude, medical students, mental illness, psychiatry

Introduction

Mental and behavioral disorders are universal. They are common and affect more than 25% of all people at some time during their lives.^[1] In spite of the magnitude of people suffering from mental illnesses, people do not get the adequate care they need, leading to increased overall burden to society. Recent national mental health survey from 12 states of India had shown that lifetime prevalence of mental disorders in the surveyed population was 13.7%. Nearly, 150 million Indians are in need of active interventions. Nearly,

80% of persons suffering from mental disorders had not received any treatment despite the presence of illness for more than 12 months. Multiple factors ranging from lack of awareness to affordability of care influence these wide treatment gaps.^[2] National Institute for Mental Health Survey suggests that one major factor responsible for this is stigma. Stigma contributes to the huge burden of mental morbidity, being a roadblock to treatment seeking. Social stigma and negative attitude can affect the quality of life for people with mental illness.

An attitude is defined by Rezler as “a relatively enduring organization of emotionally linked learned beliefs around

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an object or a situation predisposing one to respond in some preferential manner."^[3] Worldwide, studies show negative attitude among medical students toward psychiatry and mental illness.^[4-6] There may be various reasons for this negative attitude such as lack of accurate information about mental illness and lack of contact with individuals with mental illness.^[7]

The assessment of attitude of undergraduate medical students toward psychiatry and mental health is important as they are the future care providers. A negative attitude will compromise the future doctor's ability to detect and manage psychological problems regardless of knowledge of psychiatry acquired. Persons with mental illnesses account for nearly a fourth of the total caseload in primary care settings. Most often, these individuals present as common mental health problems or as a comorbid condition of other disorders and are missed or inappropriately managed. The limited availability of specialist mental health human resources has been one of the barriers in providing essential mental health care to all. Looking at the burden of mental illnesses, it is very important to make efforts for the acquisition of positive attitude toward mental illnesses and psychiatry at the undergraduate level. During training, educational interventions targeted toward them may be more effective than doctors who have already completed their training because research has shown that, as they carry on through their career, their attitudes harden and become more resistant to change.^[8]

Carefully planned teaching programs including more exposure to the individual along with proper interaction with faculty can help in changing attitude. A study from India in 1994 reveals that 2-week posting in psychiatry was not sufficient to significantly influence students attitudes in a positive direction.^[9] At present, the majority of medical colleges in Gujarat follow 2-week clinical exposure in 4th semester. We planned to assess attitude among medical students at our college during the 6th semester as they already completed their clinical posting.

Aim

This study aims to assess attitude to psychiatry and mental illness among undergraduate medical students.

Methodology

Ethical issues

Ethics Committee approval was taken from the local Institutional Human Ethics Committee of the medical college.

Study design

This is a descriptive cross-sectional questionnaire-based study.

Study setting

The study was conducted at Department of Psychiatry of GMERS Medical College, Vadodara, Gujarat with an annual intake of 150 undergraduate medical students. In this college, psychiatry training includes a 2-week clinical posting during the 4th semester, 20 h of didactic lectures during the 6th semester, and 2-week posting in psychiatry during the internship.

The clinical posting in psychiatry is 15 days long with 3 h sessions on each day in 4th semester of M. B. B. S. curriculum. During the clinical posting, they learn various aspects of mental health such as history taking, interviewing skills, mental status examination, presentation of common psychiatry illnesses, electroconvulsive therapy, counseling skills, and other treatment aspects. They attend daily rounds of the patients and also observe cases at outdoor patients department along with consultant. They are required to present case of common mental illnesses such as depression, schizophrenia, bipolar mood disorder, panic disorder, obsessive-compulsive disorder, and alcohol dependence. At the end, they have to submit written case records containing complete history along with mental status examination findings. Toward the end of posting, a ward leaving examination is conducted. During 6th semester, they attend didactic interactive lecture series.

Study population

We invited the batch of 116 students in their 6th semester of study. They had completed their clinical posting during 4th semester. The data collection was done on the 1st day of the lecture series on psychiatry.

Procedure

Students were explained the nature of the study and its purpose. Informed consent was taken and anonymity was preserved.

Study instrument

Two self-rating scales: ATP (ATP-30)^[10] and AMI^[11] were used.

ATP-30 is a 30-item questionnaire looking at attitudes related to psychiatry. This questionnaire covers domains such as (1) psychiatry patients, (2) psychiatry illness, (3) psychiatry knowledge, (4) psychiatry treatment including drugs, (5) psychiatrists, (6) psychiatry career choice, and (7) psychiatry training. Respondents express their agreement or disagreement to each of 30 items on the scale on a five-point Likert scale with categories ranging from strongly agree, agree, neutral, disagree, and strongly disagree. Responses for the items meant to measure negative attitudes are scored 1–5, whereas, items measuring positive attitudes are scored from 5 to 1. Total score on the scale indicates positive or negative

attitude, with a high total score indicating positive and low score indicating negative attitudes toward different aspects of psychiatry.

Similarly, AMI is a 20-item questionnaire which focuses on attitudes toward the causes, treatment, and consequences of mental illness and its impact on individuals and society. It also has the items constructed on a five-point Likert scale with a higher score suggesting a more favorable attitude. The scoring on some of the items is reversed to avoid response bias.

Data analysis

Data entry was done in EpiData software. Data were analyzed using Epi Info V. 6.04d (Center for Disease Control, Atlanta, USA) software. We used unpaired t test for analysis. We considered *P* value of <0.05 as statistically significant.

Results

This section presents the attitude of medical students toward psychiatry and mental illnesses through two standardized validated tools, i.e., ATP and AMI. The demographic details of the students are as follows. The sample consisted of 67 students of which 24 were males and 43 were females. Median age of students was 21 years. The majority were Hindu, staying at urban domicile, in nuclear families. All the students completed both questionnaires.

Figure 1 shows AMI score of all students on a box and whisker's plot. Minimum score was 39, and the maximum score was 80 out of total 100. Median AMI score was 54 (out of maximum 100) showing a neutral AMI.

Figure 2 shows ATP score of all students on a box and whisker's plot. Minimum score was 58, and the maximum score was 94 out of total 150. Median ATP score was 82 (out of maximum 150) showing a neutral ATP.

We performed gender-wise analysis of the AMI and ATP scores. The average AMI score was 52.9 and 55.8 among male and female students, respectively. This

difference was not statistically significant (*P* = 0.14). The average ATP score was 79.5 and 81 among male and female students, respectively. This difference was also not statistically significant (*P* = 0.42).

We had a total of 50 items capturing the students' attitude on mental illness and psychiatry coming from two separate questionnaires. With a view to simplifying the analysis, first of all, the 50 items coming from these two questionnaires were pooled together. Then, similar statements clustering around similar theme were grouped together. We formed 7 such themes for analysis. They are (1) psychiatry patients, (2) psychiatry illness, (3) psychiatry branch, (4) psychiatry treatment including drugs, (5) psychiatrists, (6) psychiatry career choice, and (7) psychiatry training. The responses on Likert scale were grouped together for simplifying the analysis, for example, "strongly agree" and "agree" were combined as a single "Agree" response, and the "strongly disagree" and "disagree" combined into a "disagree" response.

Table 1 shows the medical students' responses on statements related to psychiatry patients. On 2 ATP items, students show a positive attitude to psychiatry patients. However, on some AMI items, students show neutral response such as, "Psychiatric patients generally speaking are difficult to like," "The mentally ill should be discouraged from marrying," "Those with a Psychiatric history should never be given a job with responsibility." At the same time, they were concerned about them also like "People who take an overdose are in need of compassionate treatment," "It is preferable that the mentally ill live independently rather than in the hospital," "Not enough is being done for the care of the mentally ill." Mean score of this domain was 51.5%.

Table 2 shows responses of the medical students on statements related to mental illness and treatment. Majority of students opined about the etiology of mental illnesses that mental illnesses are genetic in origin and results of adverse social circumstances and also found important and interesting. For some concepts, students have unfavorable attitude such as "Violence mostly results from mental illness," "Depression occurs in people with a weak personality." Mean score of this domain was 46.9%.

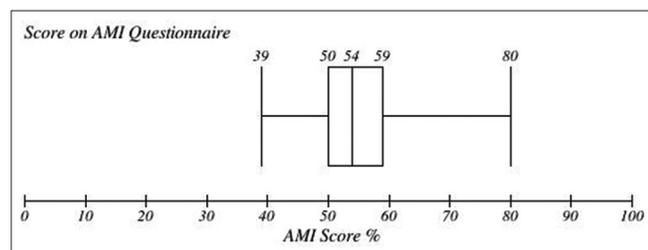


Figure 1: Score on attitude toward mental illness questionnaire

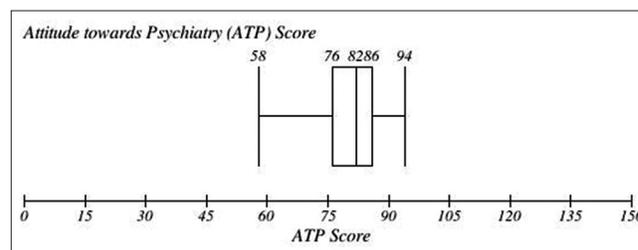


Figure 2: Score on attitude toward psychiatry questionnaire

Table 1: Psychiatry patients

Number	Statement	Agree (%)	Neutral (%)	Disagree (%)
ATP 27	If we listen to them, psychiatric patients are just human as other people	94	6	0
ATP 29	Psychiatric patients are often more interesting to work with than other patients	85	15	0
AMI.1	Psychiatric patients generally speaking are difficult to like	33	34	33
AMI 2	The mentally ill should be discouraged from marrying	39	36	25
AMI 4	Those with a psychiatric history should never be given a job with responsibility	30	26	44
AMI 7	Those who attempt suicide leaving them with serious liver damage should not be given transplant	28	24	48
AMI 10	People who take an overdose are in need of compassionate treatment	83	17	0
AMI 17	Care in the community for the mentally ill puts society at risk	16	27	57
AMI 18	It is preferable that the mentally ill live independently rather than in the hospital	60	40	0
AMI 19	Not enough is being done for the care of the mentally ill	70	30	0
AMI 20	Patients with chronic schizophrenia are incapable of looking after themselves	54	34	12

ATP=Attitude toward psychiatry, AMI=Attitude toward mental illness
The mean score for the domain Psychiatry patients was 51.5%.

Table 2: Psychiatry illness and treatment

Number	Statement	Agree (%)	Neutral (%)	Disagree (%)
Psychiatry illness				
ATP 12	Psychiatric illness deserves at least as much as attention as physical illness	90	10	0
ATP 18	It is interesting to try to unravel (discover) the cause of psychiatric illness	85	15	0
AMI 3	Violence mostly results from mental illness	57	30	13
AMI 6	Mental illnesses are wrongly diagnosed women and ethnic minorities	14	55	31
AMI 12	Depression occurs in people with a weak personality	50	21	29
AMI 13	Mental illness is the result of adverse social circumstances	82	18	0
AMI 14	Alcohol abusers have no self-control	70	18	12
AMI 15	Mental illnesses are genetic in origin	64	36	0
AMI 16	People who had good parenting as children rarely suffer from mental illness	54	27	19
Treatment				
ATP 5	It is quite easy for me to accept the efficacy (effectiveness) of psychotherapy	70	30	0
ATP 8	The practice of psychotherapy basically is fraudulent (guilty of fraud) since there is no strong evidence that it is effective	19	24	57
ATP 14	With the forms of therapy now (available) at hand, most psychiatric patients improve	75	25	0
ATP 16	Psychiatric treatment causes patient to worry too much about the symptoms	42	19	39
ATP 25	In recent years, psychiatric treatment has become quite effective	91	9	0
AMI 8	Psychiatric drugs are mostly used to control disruptive behavior	67	18	15
AMI 9	ECT should be banned	5	27	69
AMI 11	Psychiatric drugs do more harm than good	19	42	39

ATP=Attitude toward psychiatry, AMI=Attitude toward mental illness, ECT=Electro Convulsive Therapy
The mean score for Psychiatry illness and treatment was 46.9% and 55% respectively.

They show positive attitude toward the effectiveness of treatment including psychotherapy and ECT. However, negative attitude on some statements

like “Psychiatric drugs are mostly used to control disruptive behavior.” Mean score on this domain was 55%.

Table 3 shows responses of the medical students on statements related to psychiatry as branch including psychiatric hospitals and psychiatrists. They show respect and importance of psychiatry in curriculum and also of hospitals in care of mentally ill persons. Mean score of this domain was 53.9%. For psychiatry branch, students have a favorable attitude such as the majority of the students agreed with statements like, "Psychiatry is respected branch of medicine," "The practice of psychiatry allows the development of really rewarding relationships with people." Students show the favorable attitude to psychiatry. Mean score on this domain was 67.4%.

Table 4 shows responses related to Career in Psychiatry and Psychiatry training. Students show a favorable attitude toward a career in psychiatry and psychiatry training. The majority of students report that their psychiatric undergraduate training has been valuable, "These days, psychiatry is the most important part of the curriculum in medical schools." Majority of students want to become a psychiatrist, none of the students disagree on this item.

The theme-wise analysis showed that the attitude of students toward psychiatrist and psychiatry branch was

relatively better compared to their attitude to mental illness as reflected in mean score for these domains.

Discussion

Attitude is a hypothetical construct that represents an individual's like or dislike for an item; which may be positive, negative, or neutral. It originates from judgments and has affective, behavioral, and cognitive components. It also determines orientation toward a particular environment. Hence, the orientation of the medical students toward the management of psychological problem in physically ill patients during medical training shapes their attitude to mental illness as a disease and psychiatry as a medical subspecialty. This attitude also determines the trend to choose psychiatry as a career by future doctors.

Many studies have been conducted using various scales to assess the attitude of medical students toward mental illness and psychiatry. We also assessed the attitude of medical students toward psychiatry and mental illness at our college using two well-known scales ATP-30 and AMI used worldwide at various places. In a study from Nepal, attitude of medical

Table 3: Psychiatry branch and psychiatrists

Number	Statement	Agree (%)	Neutral (%)	Disagree (%)
Psychiatry branch				
ATP 11	Psychiatry is respected branch of medicine	86	14	0
ATP 13	Psychiatry has very little scientific information to go on (is not based on much scientific evidence)	25	27	48
ATP 23	These days, psychiatry is the most important part of the curriculum in medical schools	81	19	0
ATP 24	Psychiatry is so unscientific that even psychiatrists cannot agree as to what its basic applied sciences are	22	24	54
ATP 26	Most of the so-called facts in psychiatry are really just vague speculations	12	43	45
ATP 28	The practice of psychiatry allows the development of really rewarding relationships with people	85	15	0
ATP 3	Psychiatric hospitals are little more than (not very different from) prisons	25	24	51
ATP 20	Psychiatric hospitals have a specific contribution to make to (can help specifically in) the treatment of the mentally ill	95	5	0
AMI 5	Psychiatric diagnoses stigmatize people and should not be used	19	34	46
Psychiatrists				
ATP 2	Psychiatrists talk a lot but do very little	3	31	66
ATP 7	Psychiatrists seem to talk about nothing but sex	3	15	82
ATP 15	Psychiatrists tend to be at least as stable as the average doctor	70	30	0
ATP 17	Psychiatrists get less satisfaction from their work than other specialists	21	42	37
ATP 19	There is very little that psychiatrists can do for their patients	9	20	71
ATP 22	At times, it is hard to think of psychiatrists as equal to other doctors	22	31	46

ATP=Attitude toward psychiatry, AMI=Attitude toward mental illness
The mean score for psychiatry branch and psychiatrist was 53.9% and 67.4% respectively.

Table 4: Career in psychiatry and psychiatry training

Number	Statement	Agree (%)	Neutral (%)	Disagree (%)
Career in psychiatry				
ATP 1	Psychiatry is unappealing (not interesting to me) because it makes so little use of medical training	7	12	81
ATP 4	I would like to be a psychiatrist	63	37	0
ATP 6	On the whole, people taking up psychiatric training are running away from participation in real medicine	10	39	51
ATP 21	If I were asked what I considered to be the three most exciting medical specialties, psychiatry would be excluded	52	18	30
Psychiatry training				
ATP 9	Psychiatric teaching increases our understanding of medical and surgical patients	88	12	0
ATP 10	The majority of students report that their psychiatric undergraduate training has been valuable	90	10	0
ATP 23	These days, psychiatry is the most important part of the curriculum in medical schools	81	19	0

ATP=Attitude toward psychiatry

The mean score for Career in psychiatry and psychiatry training was 61.4% and 48.6% respectively.

students and interns toward psychiatry and mental illness was positive or neutral using these two scales.^[12] One study from India using these two scales reported that overall ATP did not differ among students before and after psychiatry posting.^[13] Various studies from India stated that 2-week posting in psychiatry was not sufficient to significantly influence student's attitude toward positive direction,^[9] students reported negative ATP, and exposure of psychiatry has limited change in attitude.^[14] Our students also completed their 2-week clinical posting of psychiatry in their 4th semester, that might have some influence on attitude as they all were aware of the branch itself and mental illnesses. A pilot study from Malaysia shows the positive influence of clinical posting on ATP and AMI scores suggesting psychiatry education might change the attitude.^[15] One cross-sectional study shows clinical posting has a positive impact on the attitude of students.^[16] Another study reports that although there was an increase in positive attitudes over the course of the psychiatric posting, this change may not persist. The positive change in attitude may be enduring or transient.^[17] The Mental Illness and Psychiatry being stigmatized topics from sociological viewpoint, the attitude of medical students may be influenced by other factors such as their personal beliefs, modeled by the immediate family environment, environment at school during formative years, the social circle that they belong to, and also the mass media that they are exposed to now. This necessitates further research in the form of longitudinal study which can monitor the medical student as they progress toward graduation as ours was a cross-sectional questionnaire-based study only.

We did not translate the scales which we had obtained in English version considering the fact that the medium of instruction among our medical students was English, similar was the case in the study from Nepal.^[12]

We have also done theme-wise analysis by clubbing the items of both scales in seven areas: (1) psychiatry patients,(2) psychiatry illness,(3) psychiatry treatment including drugs,(4) psychiatry branch,(5) psychiatrists,(6) psychiatry career choice, and (7) psychiatry training. We found that the attitude of students toward psychiatrist and psychiatry branch was relatively better compared to their attitude to mental illness. This might be due to the actual content of psychiatry being taught, and it would be interesting to see whether it can be modified to change the attitude towards mental illness also. Earlier studies have shown that psychiatry education has proved to be effective in changing the attitude of medical students toward mental illness; however, there is urgent need to review the current curriculum also^[18] and to incorporate newer teaching methods to develop the attitudes of empathy, respect, understanding, etc., and to reduce stigma toward psychiatry resulting in better patient care.^[19]

A substantial number of students also gave "neutral" response to statements of ATP and AMI. This is known to happen when the respondents have little knowledge about the topic of interest. This is likely the case with our students. It is likely that our students may not have formed a concrete opinion related to the themes under this study.

The limitation of this study is that we could cover participants from only one batch of students from our institute only. This was a cross-sectional study, and there were no other groups taken for any comparison. Furthermore, we could not study the attitude of these students before clinical posting.

Conclusion

Overall attitude to mental illness and psychiatry among the 6th semester medical students of our college were

neutral. There was no gender difference in the attitude to mental illness or psychiatry. A further study among other semester students is needed to get the overall picture. More efforts are needed to change the attitude to the positive side.

Recommendations

Looking at the burden of mental illnesses, it is very important to make efforts for acquisition of positive attitude to mental illness and psychiatry at the undergraduate level. Carefully planned teaching programs including more exposure to the individual along with proper interaction with faculty should be tried for bringing the expected change in attitude.

Furthermore, we would like to study the impact of clinical postings and didactic lecture series on the attitude of students in subsequent batches.

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Conflicts of interest

There are no conflicts of interest.

References

1. The World Health Report 2001. Mental Health: New Understanding; New Hope. Geneva: WHO; 2001.
2. Gururaj G, Varghese M, Benegal V, Rao GN, Pathak K, Singh LK, *et al*. National Mental Health Survey of India, 2015-16: Summary. National Institute of Mental Health and Neurosciences. NIMHANS Publication No. 128; 2016.
3. Rezler AG. Methods of attitude assessment for medical teachers. *Med Educ* 1976;10:43-51.
4. Khan SA, Yousafzai AU, Mehira RK, Inam-ul-Haq. Attitude of medical students towards psychiatry in NWFP. *J Ayub Med Coll Abbottabad* 2008;20:44-6.
5. Malhi GS, Parker GB, Parker K, Carr VJ, Kirkby KC, Yellowlees P, *et al*. Attitudes toward psychiatry among students entering medical school. *Acta Psychiatr Scand* 2003;107:424-9.
6. Prabhakaran RR, Murugappan M, Devar JV. Undergraduate psychiatric education and attitude of medical students towards psychiatry. *Indian J Psychol Med* 1989;12:37-48.
7. Singer P, Dornbush RL, Brownstein EJ, Freedman AM. Undergraduate psychiatric education and attitudes of medical students towards psychiatry. *Compr Psychiatry* 1986;27:14-20.
8. Smith JK, Weaver DB. Capturing medical students' idealism. *Ann Fam Med* 2006;4 Suppl 1:S32-7.
9. Rajagopalan M, Kuruvilla K. Medical students' attitudes towards psychiatry: Effect of a two week posting. *Indian J Psychiatry* 1994;36:177-82.
10. Burra P, Kalin R, Leichner P, Waldron JJ, Handforth JR, Jarrett FJ, *et al*. The ATP 30-a scale for measuring medical students' attitudes to psychiatry. *Med Educ* 1982;16:31-8.
11. Singh SP, Baxter H, Standen P, Duggan C. Changing the attitudes of 'tomorrow's doctors' towards mental illness and psychiatry: A comparison of two teaching methods. *Med Educ* 1998;32:115-20.
12. Risal A, Sharma PP, Sanjel S. Attitude toward mental illness and psychiatry among the medical students and interns in a medical college. *JNMA J Nepal Med Assoc* 2013;52:322-31.
13. Tharyan P, John T, Tharyan A, Braganza D. Attitudes of 'tomorrow's doctors' towards psychiatry and mental illness. *Natl Med J India* 2001;14:355-9.
14. Gulati P, Das S, Chavan BS. Impact of psychiatry training on attitude of medical students toward mental illness and psychiatry. *Indian J Psychiatry* 2014;56:271-7.
15. Tan SM, Azmi MT, Reddy JP, Shaharom MH, Rosdinom R, Maniam T, *et al*. Does clinical exposure to patients in medical school affect trainee doctors' attitudes towards mental disorders and patients? - A pilot study. *Med J Malaysia* 2005;60:328-37.
16. Konwar R, Pardal PK, Prakash J, Rythem. Does psychiatry rotation in undergraduate curriculum bring about a change in the attitude of medical student toward concept and practice of psychiatry: A comparative analysis. *Ind Psychiatry J* 2012;21:144-7.
17. Baxter H, Singh SP, Standen P, Duggan C. The attitudes of 'tomorrow's doctors' towards mental illness and psychiatry: Changes during the final undergraduate year. *Med Educ* 2001;35:381-3.
18. Poreddi V, Thimmaiah R, Math SB. Attitudes toward people with mental illness among medical students. *J Neurosci Rural Pract* 2015;6:349-54.
19. Nayak A. Changing medical students' attitudes to psychiatry through newer teaching techniques. *Mens Sana Monogr* 2015;13:180-6.